

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

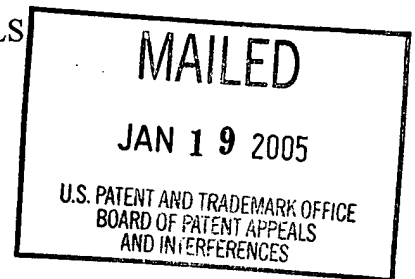
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* YONG-CHENG SHI  
and YAYUN LIU

Appeal No. 2004-2047  
Application 09/817,419

HEARD: December 8, 2004



Before GARRIS, WARREN and WALTZ, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 and 3 through 41.

Claims 1 and 22 illustrate appellants' invention of a method for preparing a heat-treated-grain having an increase of total dietary fiber content of at least 10%, and are representative of the claims on appeal:

1. A method for preparing a grain containing starch with increased total dietary fiber content comprising heating a base grain having a total moisture content of from about 20% to about 45% by weight based on dry weight of the grain, at a temperature of from about 90°C to about 130°C for a period of about 0.5 to 24 hours, under a combination of moisture and temperature conditions such that the starch does not have its granular structure and birefringence completely

destroyed and to provide a heat-treated-grain having an increase in total dietary fiber content ("TDF") of at least 10%.

3. The method of Claim 1 wherein the base grain contains a starch having at least 40% by weight amylose content.

11. A grain made by the method of Claim 1.

12. The grain of Claim 11 having an increase in the TDF content of greater than 30%.

13. The grain of Claim 11 having a higher onset temperature than a corresponding untreated grain.

22. A method for preparing a grain containing starch with increased total dietary fiber content comprising heating a grain containing starch having at least about 40% by weight amylose, said grain having a total moisture content of from about 8% to about 85% by weight based on the dry weight of the grain, at a temperature of from about 65°C to about 150°C, under a combination of moisture and temperature conditions to provide a heat-treated-grain having an increase of total dietary fiber content ("TDF") of at least 10%.

31. A grain made by the method of Claim 22.

The references relied on by the examiner are:

Ferguson et al. (Ferguson)	5,300,145	Apr. 5, 1994
Whitney et al. (Whitney)	5,972,413	Oct. 26, 1999

The examiner has rejected appealed claims 1, 4, 5, 8 and 10 through 15 under 35 U.S.C. § 102(b) as anticipated by Whitney, and appealed claims 3, 6, 7, 9 and 16 through 41 under 35 U.S.C. § 103(a) as being unpatentable over Whitney in view of Ferguson.

"Appellants consider each claim under appeal herein to be separately patentable" but provide separate arguments only for appealed claims 12 and 15 and claims 13 and 14, and merely point out only the differences in claim limitations of the remaining claims (brief, pages 4-7 and 10). Identifying differences in limitations between appealed claims does not amount to arguments for separate patentability of the claims. Thus, we decide this appeal based on appealed claims 1, 3, 11 through 13, 22 and 31 as representative of the grounds of rejection and the separately argued groups of claims. 37 CFR § 1.192(c)(7) (2003); *see also* 37 CFR § 41.37(c)(1)(vii) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

We affirm.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the answer and to the brief for a complete exposition thereof.

*Opinion*

The examiner finds that Whitney anticipates the processes of claims 1 and 11 through 13 under § 102(b) because the reference discloses a process of “heating grains . . . hydrated to have a moisture content of from about 28-36% . . . in water at a temperature of from about 95-100 degrees C for about 20-40 minutes . . . until they are substantially fully cooked,” citing cols. 2-3, which “is the same as the claimed process” since “[t]he moisture content and the heating temperature and time are within the ranges claimed [and] [t]he properties as claimed are inherent in the prior art product” because “the grain is subjected to the same treatment as claimed” (answer, page 3). The examiner submits that

[t]he limitation of ‘the starch does not have its granular structure and birefringence completely destroy [*sic*, destroyed]’ is equivalent to the disclosure of ‘substantially fully cooked’ [in Whitney] because substantially fully cooked means the grains are not completely fully cooked; thus, this means the starch does not have its granular structure and birefringence completely destroy [*sic*, destroyed]. [*Id.*]

Appellants submit that the claimed invention encompassed by claims 1 and 11 through 13 is patentable over Whitney which states that the “process has the advantageous property of gelatinization (see col. 2, lines 28-30),” because in the claimed invention, “the granules in the heat-treated grain are not completely destroyed and thus are not fully gelatinized,” contending in this respect, that the disclosure in the “Technical Field” and “Background” sections as well as at col. 2, ll. 28-32 and 64, and in the sole Example of Whitney “clearly indicates that the intent of the invention is to fully cook the berries and thus fully gelatinize the starch” so that it can be shredded (brief, page 8). Appellants thus argue that “Whitney teaches away from the present invention” on the basis that in Whitney, “[t]he term ‘substantially’ is intended to mean that while it is the intent that all the grain be gelatinized, one practicing the art would fall within the invention [of Whitney] if a few grains are not gelatinized” (*id.*, page 9). In this respect, appellants contend that in contrast to Whitney, the claimed method encompassed by appealed claim 1 requires that “the starch does not have its granular structure and birefringence completely destroyed,” pointing to the disclosure at page 9 of their specification (*id.*),

Appellants further contend that there is no anticipation because the declaration of appellant Shi<sup>1</sup> “shows that the starch in [the Example of] Whitney has been completely gelatinized such that it is no longer birefringent,” relying on the data in the micrographs, pointing out that the granular structure and birefringence was “totally destroyed” even though the cooking conditions fall within the claimed ranges (*id.*, pages 9-10). Appellants contend with respect to claims 12 and 13, that the declaration establishes that the grain of the Whitney Example does not have increased total dietary fiber content or a higher onset temperature (*id.*, page 10).

The examiner responds that “[w]hile [Whitney] might teach completely cooked grain, they also teach the grain can be substantially fully cooked . . . [which] means the grain is not completely cooked and thus the starch does not have its granular structure and birefringence completely destroy [*sic*, destroyed],” that is, “[t]he [claimed] starch is not fully gelatinized but it can be substantially fully gelatinized which is what Whitney teaches” (answer, pages 5-6). The examiner finds that appellants do “not have any evidence to show that if the starch is not fully gelatinized, the grain will not shred properly and will have undesirable eating properties” (*id.*, page 6). The examiner submits that even if appellants’ interpretation of “substantially” in Whitney is “applied, the reference still meets the claimed limitation because the few grains that are not gelatinized will not have their starch destroyed; thus, the starch does not have its granular structure and birefringence completely destroyed” (*id.*, page 7).

The examiner finds the showing based on wheat representing the Whitney Example and corn for the claimed example in the Shi declaration unpersuasive for several reasons, including that the showing “is not a true comparison” because of the difference in grains and is not commensurate in scope with the claims which include any type of grain (*id.*, pages 7 and 8). The examiner further notes that because the wheat of the Whitney is “already gelatinized . . . no endothermic event is observed from the DSC [that is, differential scanning calorimetry,] data” (*id.*, page 8).

Appellants reply, with respect to the examiner’s finding and argument that the properties as claimed are thus inherent because the moisture content, temperature and cook time disclosed

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<sup>1</sup> The declaration under 37 CFR § 1.132 filed March 11, 2003.

by Whitney fall within the claimed ranges, that “[o]ne skilled in the art understands that different moisture content/temperature/time combinations will result in the starch of a grain being or not being completely gelatinized based on the grain type . . . [and] [t]hus the properties as claimed are not inherent in the Whitney grain . . . merely because they are subject to the ‘same’ treatment. This would only be true if the same grain type is used” (reply brief, page 1). Appellants point out that one of ordinary skill in the art can determine the combination of conditions for each grain to achieve the limitations of the claims (*id.*). Appellants contend that Whitney provides evidence that starch not fully gelatinized will result in grain that will not process and has undesirable eating properties in describing “undercooked” and “overcooked” grain berries in col. 1 thereof (*id.*, page 2; *see* Whitney, col. 1, ll. 43-47). Appellants further contend that the determination of birefringence is used in the art “to define the degree of gelatinization retained by a starch granule,” alleging that “[w]hen a grain is substantially cooked, it will lose its birefringency” (*id.*, pages 2-3).

With respect to the examiner’s contention that the Sui declaration is not commensurate in scope with the claims, appellants reply that the purpose of “the declaration was to defeat the alleged anticipation of Whitney, showing that the Whitney example did not fall within the present application” (*id.*, page 3).

The examiner finds that appealed claims 3, 22 and 31 are obvious under § 103(a) over Whitney in view of Ferguson because one of ordinary skill in this art would have selected any known grain to use in the processes of Whitney and thus would have used the high amylose corn of Ferguson in such process in the reasonable expectation of obtaining cooked starch as taught by Whitney for use in food products (answer, pages 5-6).

Appellants submit that the appealed claims differ from Whitney because “the starch is not gelatinized” and Ferguson does not remedy this deficiency of Whitney (brief, page 10). Appellants further allege that “it is clear from the application that the use of high amylose grain is necessary to achieve a high total dietary fiber content as evidenced by Tables 2 and 3 which show the correlation between high amylose and high TDF content,” neither of which is taught or suggested by the references (*id.*, pages 10-11).

The examiner responds that “[t]he limitation of ‘the starch does not have its granular structure and birefringence completely destroyed’ is not the same as ‘the starch is not gelatinized,’” and thus appellants argue “a limitation that is not found in the claims” (answer, pages 8-9).

Appellants reply that “there is no suggestion in Whitney that high amylose grains could be used although they were well known at the time of the [Whitney] invention,” and allege that “one skilled in the art of cereal making knows that high amylose grains are more difficult to cook out and have other attributes which would lead the skilled artisan away from using such grain” (reply brief, page 2). Appellants also contend that Whitney or Fergason would not have suggested that “such a high total dietary fiber . . . would be achieved by such combination” (*id.*).

In order to review the examiner’s application of prior art to the appealed claims and appellants’ arguments with respect thereto, it is necessary to interpret the language of appealed claims 1, 3 and 22 and appealed claims 11 through 13 and 31, drawn to method and product, respectively, by giving the claim terms their broadest reasonable interpretation consistent with the written description provided in appellants’ specification as it would be interpreted by one of ordinary skill in this art, *see In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), without reading into these claims any limitation or particular embodiment which is disclosed in the specification. *See Morris, supra; Zletz, supra; In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978).

The claimed method of preparing a grain containing starch encompassed by appealed claim 1 comprises at least batch or continuous processes of heating in water *any* base grain, including the specified amylose content grains of appealed claim 3, having the specified moisture content at the specified temperature for the specified time “under a combination of moisture and temperature conditions” to achieve the limitations (1) “that the starch does not have its granular structure and birefringence completely destroyed” and (2) “to provide a heat-treated-grain having an increase of total dietary fiber content (“TDF”) of at least 10%.” The claimed method of preparing a grain containing starch encompassed by appealed claim 22 comprises at least heating *any* grain containing starch having at least 40% by weight amylose and the specified moisture

content at the specified temperature “under a combination of moisture and temperature conditions” to achieve the sole limitation of providing “a heat-treated-grain having an increase of total dietary fiber (“TDF”) content of at least 10%.” The transitional term “comprising” opens each of these claims to encompass methods which have additional steps and conditions, such as a step or steps of hydrating a base grain to attain a moisture level within the claimed ranges. *See generally, In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”).

According to appellants, the granular structure and birefringence of the “starch” are not completely destroyed when the “component starch granule may be partially swollen but its crystallinity not completely destroyed” (specification, e.g., page 9, lines 1-10), at which point the “starch” is less than fully gelatinized (*see* brief, pages 3-4), the difference being that birefringence is detectable at least to some extent. Thus, in other words, this limitation requires that the process simply “does not . . . completely” gelatinize the “starch.”

In this respect, we interpret this limitation of appealed claim 1 to involve the “starch” of the whole of the heat treated grain, and not the “starch” contained by a single grain berry *per se*. Indeed, we find no disclosure in the written description in appellants’ application which establishes that each grain berry of the heat treated grain has the same moisture content, is heat treated to the same extent, and thus that the starch content of each grain is gelatinized to the same extent. For example, it is apparent that the “starch” sample size used in the DSC measurements to determine the delta H of the gelatinized, heat treated grain is not a single grain berry (specification, page 14, ll. 6-17).

Therefore, processes encompassed by appealed claims 1 and 3 can fully gelatinize the starch of almost all of the individual grain berries, such that the “starch” of the whole of the heat treated grain exhibits granular structure and birefringence to some extent, however small.

The only requirement of appealed claim 22 is that the specified amylose containing grain of specified moisture content must be processed within the stated temperature range so as to increase total dietary fiber content of the heat treated grain by at least 10%. Thus, the grain can

be fully cooked or less than fully cooked in these claimed processes, as long as the total dietary fiber content of the grain is increased by at least 10%.

Appealed claims 11 through 13 and 31 are drafted in product-by-process format to encompass products characterized by the respective processes of appealed claims 1 and 22, and in claims 12 and 13, the additional stated properties. *See generally, In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

We find that Whitney would have disclosed to one of ordinary skill in this art that grains “are cooked in water to gelatinize the starch content,” and a disadvantage of batch cooking wheat grains or berries “is the inconsistency of cook of the wheat which is often observed . . . within a batch” including “variations in the degree of cooking,” describing the results of under- and overcooked berries (col. 1, ll. 16-53). To address these problems, Whitney discloses a continuous process utilizing two stages, wherein in the first or pre-cooking stage, the grain is hydrated under specified conditions “allowing a substantial amount of starch to remain ungelatinized,” and in the second stage, the pre-cooked grain is heated in water under specified conditions “to substantially fully cook said grains” (col. 1, l. 66, to col. 2, l. 13). Whitney further acknowledges that grain “cooked in water to gelatinize the starch content” can be “shredded” (col. 1, ll. 16-19) and would have taught one of ordinary skill that the disclosed process provides cooked and substantially cooked grain berries which can be shredded (col. 2, ll. 17-21). Among the illustrative examples of cereal grain that can be processed are wheat, rice, barley and maize (col. 2, ll. 21-23).

In the parts of the disclosure cited by appellants, Whitney states that “[t]he cooked grain has the advantageous properties of consistency in moisture content and gelatinization of starch and the process can be operated continuously to provide berries which are both evenly and completely cooked,” and describes the parameters of the first or pre-cooking stage which would not cause a “detriment to the effectiveness of the second stage of fully cooking the berries” (col. 2, ll. 28-32 and 59-64). In the pre-cooking stage, the grain berries are hydrated to about 28-36% and, as measured by differential scanning calorimetry, have a degree of gelatinization of below 60% (col. 2, ll. 33-67).



Whitney would have further disclosed that “[i]n the second stage, the partially hydrated berries, such as wheat berries, are heated until they are substantially fully cooked” at a temperature of about 95-100°C “for a time sufficient to achieve substantially consistent and even gelatinization throughout the berry,” which depends “at least in part upon a number of variables including the type and variety of grain berry, the relative hardness, the proportion of damaged or broken berries and on whether the batch contains any berries which have sprouted” as well as weather conditions at the time of harvest (col. 3, ll. 1-13). Whitney teaches that generally, the cook time is about 20 to about 40 minutes, and fully cooked berries have a moisture content of from about 44-51%.

Whitney again notes the inherent disadvantages in batch processes (col. 3, ll. 25-28 and 40-42), and points out the continuous cooking process “is more easily controlled and the undesired variations in degree of cook and hydration within and between batches . . . can be substantially reduced . . . [and] provides the opportunity to more accurately and precisely control the degree of cook and produce a uniform population of cooked berries” (col. 3, ll. 29-40). Whitney describes the a variety of vessels that can be used for the continuous process in addition to the cooking vessels of Whitney **FIG. 1** (col. 3, l. 35, to col. 6, l. 14). In the sole Example, wheat berries having a moisture content of “320°C [*sic*, 32%]” were continuously treated at 98°C for 28 minutes, and the product is described as “[f]ully cooked wheat” (col. 6, ll. 17-37).

The principal issue with respect to the ground of rejection under § 102(b) (answer, e.g., pages 3 and 5-6) is whether the teachings and inferences that one skilled in the art would find as a matter of fact in the disclosure of Whitney, taken as a whole, with respect to the disclosed process of continuously cooking grains containing starch by heating in water at the specified temperature “for a period of time sufficient to substantially fully cook said grain,”<sup>2</sup> would have described the claimed invention of appealed claims 1 and 11 through 13 within the meaning of

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<sup>2</sup> It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968); *In re Aller*, 220 F.2d 454, 458-59, 105 USPQ 233, 237 (CCPA 1955), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

this statutory provision. In this respect, it is well settled that the examiner has the burden of establishing a *prima facie* case of anticipation under § 102(b) in the first instance by pointing out where, as a matter of fact, each and every element of the claimed invention, arranged as required by the claim, is described identically in a single reference, either expressly or under the principles of inherency, in a manner sufficient to have placed a person of ordinary skill in the art in possession thereof. *See generally, In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). “When the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. [Citations omitted.]” *Spada*, 911 F.2d at 709, 15 USPQ2d at 1658.

We have compared appealed claims 1 and 11 through 13, as we have interpreted these claims above, with the teachings and inferences that we find one skilled in the art would have found as a matter of fact in Whitney and decide that the reference provides substantial evidence supporting the examiner’s *prima facie* case of anticipation of the claimed methods and products. Thus, we again consider the record as a whole with respect to this ground of rejection in light of appellants’ rebuttal arguments and the objective evidence in the Sui declaration as relied on in the brief and reply brief. *See generally, Spada*, 911 F.2d at 707 n.3, 15 USPQ2d at 1657 n.3.

We cannot agree with appellants that one skilled in this art would find that the sole intent of Whitney is to “fully cook,” and thus fully gelatinize, all of the starch in the grain berries in the grain mass subjected to the disclosed continuous process. Indeed, while Whitney discloses that this outcome is desirable, the reference describes a number of factors that make this outcome difficult to achieve even in continuous processing mode (e.g., col. 3, lines 6-13, and 34-37), and thus describes the disclosed process as producing grain berries that are “substantially fully cooked.” In this respect, we agree with appellants (*see above* p. 3) and the examiner (*see above* p. 4) that the reference language “substantially fully cooked” means that Whitney fully describes processes in which all of the starch in the grain berries is *not* fully cooked, and thus is *not* fully gelatinized. Consequently, as the examiner points out, because processes described by Whitney do not fully cook all of the starch in the grain berries, the starch inherently satisfies the limitation of appealed claim 1 that “the starch does not have its granular structure and birefringence

completely destroyed,” and thus produce “grain” which are so characterized in appealed claims 11 through 13.

We point out here that we agree with the examiner that appellants have not presented evidence supporting their argument in the brief that the starch of the grain berries must be fully gelatinized in order for the berries to be further processed by shredding. Indeed, the acknowledged characteristics of under- and overcooked berries in Whitney relied on by appellants in the reply brief does is not disclosed to apply to “substantially fully cooked” berries and thus, does not evince that “substantially fully cooked” berries cannot be shredded.

Accordingly, because Whitney further describes total moisture content of the base grain, temperature and cooking time limitations which satisfy the corresponding limitations in appealed claims 1 and 11 through 13, it reasonably appears from the substantial evidence in the reference that the described processes of Whitney which “substantially fully cook” a base grain are identical to the processes encompassed by appealed claim 1 and thus that the grain products produced by the reference processes are identical to the grain products encompassed by appealed claims 11 through 13, even though the limitation in appealed claim 1 “to provide a heat-treated-grain having an increase of total dietary fiber content (“TDF”) of at least 10%” and the specific limitations on the grain products in appealed claims 12 and 13 are not disclosed by Whitney. *See generally, Spada*, 911 F.2d at 708-09, 15 USPQ2d at 1657-58 (Fed. Cir. 1990) (“The Board held that the compositions claimed by Spada ‘appear to be identical’ to those described by Smith. While Spada criticizes the usage of the word ‘appear,’ we think that it was reasonable for the PTO to infer that the polymerization by both Smith and Spada of identical monomers, employing the same or similar polymerization techniques, would produce polymers having the identical composition.”).

Therefore, appellants have the burden of patentably distinguishing the claimed invention encompassed by appealed claims 1 and 11 through 13 from the processes and the products thereof described as a matter of fact by Whitney with effective argument and/or objective evidence establishing that the claimed methods encompassed by appealed claim 1 and the claimed products encompassed by appealed claims 11 through 13 are not the same as those of the reference. *See generally, Spada*, 911 F.2d at 709, 15 USPQ2d at 1658; *In re Best*, 562 F.2d

1252, , 195 USPQ 430, 432-34 (CCPA 1977) (“Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke*, [441 F.2d 660, 169 USPQ 563 (CCPA 1971)]. Whether the rejection is based on “inherency” under 35 USC 102, on “prima facie obviousness” under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products. [Footnote and citation omitted.]”); *see also In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975) (“Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]. [Citation omitted.]”).

As we discussed above, appellants’ arguments are not convincing that the claimed processes and products patentably distinguish over the “substantially fully cooked” processes and products described by Whitney. Furthermore, appellants state in the reply brief that the sole purpose of the evidence in the Sui declaration is to show that the Whitney Example did not fall within the claimed invention. In this context, even if the *batch* process stated to represent the *continuous* process of the Whitney Example in the Sui declaration can reasonably be considered to do so in spite of the departure from the process disclosed in the reference Example, the evidence does no more than establish that the disclosure of “fully cooked wheat” berries in the Whitney Example is correct. In this respect, there is no evidence in the declaration that pertains to the “substantially fully cooked” processes also described as a matter of fact by Whitney, and indeed, appellants do not state the evidence does so.<sup>3</sup>

Accordingly, we have again considered the totality of the record before us, weighing all of the evidence of anticipation found in Whitney with appellant’s countervailing arguments for non-anticipation in the brief and reply brief, and based thereon, conclude that the claimed

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<sup>3</sup> Cf. *In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) (“It is not the function of this court to examine the claims in greater detail than argued by appellant, looking for nonobvious distinctions over the prior art.”).

invention encompassed by appealed claims 1, 4, 5, 8 and 10 through 15 would have been anticipated as a matter of fact under 35 U.S.C. § 102(b).

Turning now to the ground of rejection under § 103(a), we further are in agreement with the supported conclusion advanced by the examiner that as a matter of law, *prima facie*, one of ordinary skill in this art would have found in the combined teachings of Whitney and Fergason the reasonable suggestion to use the high amylose content corn grain of Fergason in the processes of Whitney in the reasonable expectation of obtaining processes and products in which the corn berries are “substantially fully cooked,” as required by appealed claim 3 and fall within appealed claims 22 and 31, as well as “fully cooked” which fall within appealed claims 22 and 31. Accordingly, we again consider the record as a whole with respect to this ground of rejection in light of appellants’ rebuttal arguments as relied on in the brief and reply brief. *See generally, In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We recognize that, as pointed out by appellants, Whitney does not specifically disclose the use of high amylose corn grain in the continuous processes disclosed therein, either resulting in “substantially fully cooked” or “fully cooked” berries, and the correlation between amylose content and total dietary fiber. However, we fail to find in Whitney any limitation with respect to the kind of grain that can be cooked in the disclosed processes (see, e.g., col. 2, ll. 17-23). Indeed, while it may be that high amylose grains may be more difficult to cook, as appellants allege, we note again here that Whitney recognizes a number of factors which would be taken into consideration by one of ordinary skill in this art in determining how to cook a particular gain (e.g., col. 3, lines 6-13). In any event, appellants’ unsupported argument is insufficient to establish that one of ordinary skill in this art would have been led away from using the grain of Fergason in the processes of Whitney, and particularly in the absence of evidence to that effect in Fergason. *See In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 256 (CCPA 1979); *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); see also *In re Gurley*, 27 F.3d 551, 552-53, 31 USPQ2d 1130, 1131-32 (Fed. Cir. 1994).

Appellants further allege that it is clear from specification Tables 2 and 3 that a high amylose content grain is necessary to achieve high total dietary fiber content, pointing out that

this relationship is not suggested by the combination of references. We find that specification Table 2 is based on “normal maize grains” which, of course, is not high amylose grain. We note that only the fourth run reported in this table shows an increase of total dietary fiber that exceeds the total dietary fiber of the base grain by 10%. In the runs with high amylose grains reported in Table 3, only samples 3 and 4 of Hylon® V and samples 3 and 5 of LAPS meet the 10% increase in total dietary fiber limitation specified in appealed claims 3, 22 and 31, even though in several of the other samples, the moisture and cook temperatures fall within such ranges in at least appealed claims 22 and 31, with that of several samples also falling within such ranges in appealed claim 3. Appellants do not explain how such evidence supports their position.

Thus, we find no evidence in the record which establishes that an increase in total dietary fiber would have been an unexpected result from combining the teachings of Whitney and Ferguson. Accordingly, on this record one of ordinary skill in this art routinely following the combined teachings of Whitney and Ferguson would have reasonably arrived at the claimed methods and products encompassed by appealed claims 3, 22 and 31, including each and every element thereof arranged as required therein, without resort to appellants’ specification, even though this person would not have recognized that such result can increase the total dietary fiber of the grain. Therefore, the burden is on appellants to establish by effective argument or objective evidence that the claimed methods and products patentably distinguish over the disclosure of the combined references even though the rejection is based on § 103. *See, e.g., Best*, 562 F.2d at 1254-56, 195 USPQ at 432-34 (CCPA 1977); *Skoner*, 517 F.2d at 950-51, 186 USPQ at 82-83.

Appellants have not carried this burden. Indeed, it is well settled that appellants’ discovery of a new benefit of an old process or product does not render an old process or product again patentable simply because those practicing the process by which the product is obtained may not have appreciated the results produced thereby. *See, e.g., Spada*, 911 F.2d at 707, 15 USPQ2d at 1657; *In re Woodruff*, 919 F.2d 1575, 1577, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983) (“[I]t is . . . irrelevant that those using the invention may not have appreciated the

results[,] . . . [otherwise] it would be possible to obtain a patent for an old and unchanged process. [Citations omitted.]”); *Skoner*, 517 F.2d at 950, 186 USPQ at 83.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Whitney and Fergason with appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 3, 6, 7, 9 and 16 through 41 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

*AFFIRMED*

Bradley R. Harris

BRADLEY R. GARRIS  
Administrative Patent Judge

*Richard D. Johnson*

CHARLES F. WARREN  
Administrative Patent Judge

Thomas A. Waltz

THOMAS A. WALTZ  
Administrative Patent Judge

# BOARD OF PATENT APPEALS AND INTERFERENCES



Appeal No. 2004-2047  
Application 09/817,419

Laurelee A. Duncan  
National Starch & Chemical Company  
Box 6500  
Bridgewater, NJ 08807